Trend Study 25C-12-03

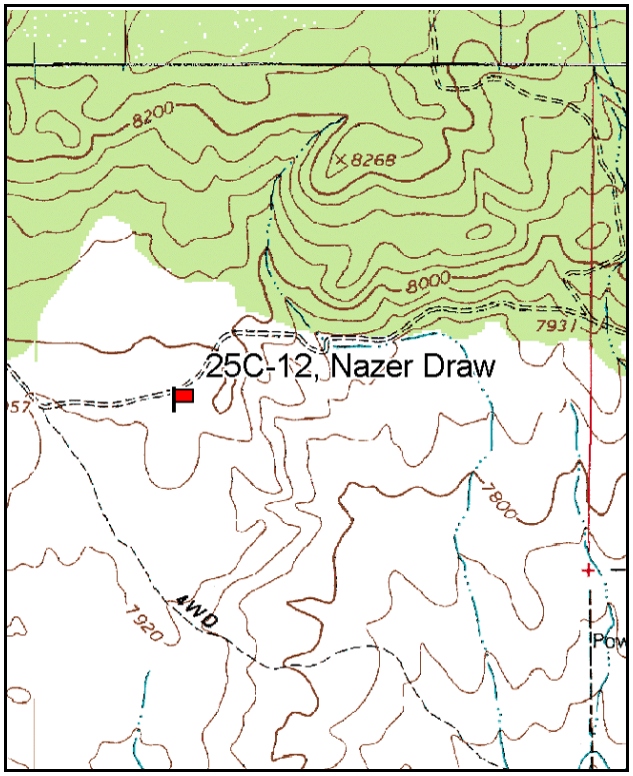
Study site name: Nazer Draw . Vegetation type: Mountain Brush .

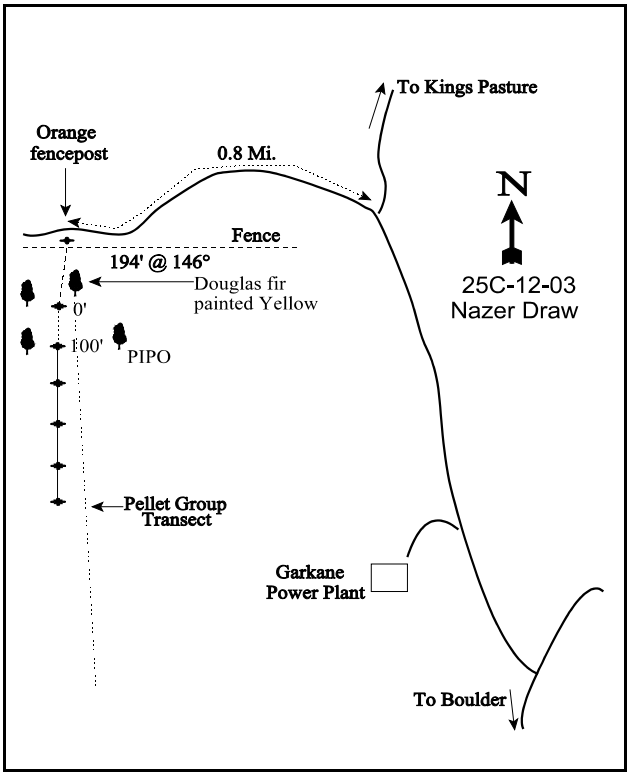
Compass bearing: frequency baseline 161 degrees magnetic.

Frequency belt placement: line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line4 (71ft). No rebar.

LOCATION DESCRIPTION

Travel north from Boulder on SR12 for approximately 5.0 miles to the Garkane Power Plant Road. Turn left (west) onto this road. Go 0.95 miles to a cattleguard. Continue 0.2 miles to a minor fork. Bear left onto a rough road and go 0.8 miles. This road is now closed so you now have to walk the 0.8 miles to the site. Stop along the fence by an orange fence post, which serves as a witness post for the range trend study and adjacent pellet group transect. The transect starts 195 feet south of the fence. The 0-foot baseline stake is a 1 1/2-foot tall fence post marked with browse tag #7131.





Map Name: Boulder Town

Diagrammatic Sketch

Township 32S , Range 4E , Section 27

GPS: NAD 27, UTM 12S 4204780 N, 460128 E

DISCUSSION

Nazer Draw - Trend Study No. 25C-12

The Nazer Draw study samples an open bench with a mixture of low-growing shrubs, mountain brush and grass. The study site is part of a 1,200 acre seeding project completed in 1955. It is surrounded by ponderosa pine, scattered clumps of oak, and slopes dominated by mountain brush. The site is used by big game year-round, but less so in the winter. Data from the nearby DWR pellet group transect shows moderate use at 32 days use/acre from 1990-91 to 1993-94 (79 ddu/ha) (Evans et al. 1995). Pellet group data taken along the study site baseline in 1998 estimated 27 deer, 9 elk, and 6 cow days use/acre (67 ddu/ha, 22 edu/ha and 15 cdu/ha). Cattle sign from 1998 appeared to be from previous summer. Rabbits also utilize the site in moderate numbers. Pellet group data from 2003 estimated similar use at 63 deer, 11 elk, and 5 cow days use/acre (155 ddu/ha, 26 edu/ha, and 13 cdu/ha). Most of the pellet groups appeared to be from spring/fall and summer use.
The almost level bench drains to the south to Boulder Creek and Nazer Draw. At the study site, the elevation is about 8,000 feet. Due to the level terrain, erosion potential is minimal. There has been some soil loss in the past as evidenced by the amount of pavement and rock on the soil surface. The soil is shallow with an effective rooting depth estimated at just over 10 inches. Texture is a sandy loam which is moderately acidic (pH 5.6) and contains a high percentage of coarse fragments in the profile. Parent material is basalt.

A variety of browse occur on the site including several preferred species. The most numerous shrub is black sagebrush which had a very high density of 19,540 plants/acre in 2003. The population is dynamic with abundant young recruitment and large numbers of seedlings encountered in most years. Plants are vigorous and have displayed mostly light to moderate use between 1987 and 1998. Very little use was observed during the 2003 reading. Percent decadence has steadily declined from 34% in 1987, to 22% in 1994 and 18% by 1998 and 2003.

Another key browse species is a low, spreading form of bitterbrush. Density was estimated at about 1,500 plants/acre in 1994 and 2003. These plants have received continual heavy use, especially in 1987 and 2003. Vigor was normal on most plants from 1987 to 1998, but drought conditions combined with extremely heavy use in 2003 have caused a decline in average vigor for 32% of the population. The number of decadent plants also increased from 4% in 1998 to 46% in 2003. Young recruitment has been variable through the years but is currently poor. These shrubs may also reproduce by layering. Annual leader growth was good in 2003 averaging 3.5 inches.

Scattered around the site but more abundant on the surrounding slopes are true mountain mahogany and serviceberry. Both species have been moderately to heavily hedged. Most of the mature serviceberry on the site are small averaging less than 2 feet in height, due in part to continual heavy use.

The oak clones are present around the site and were picked up with the larger sample used in 1994. The population appears relatively stable and provides good escape and thermal cover. Little use of oak has been noted during any reading. Other shrub species found on the site include dwarf rabbitbrush, stickyleaf low rabbitbrush, slenderbush eriogonum, and broom snakeweed. The site also supports some pinyon and Ponderosa pine trees. These appear to be moving into the site. The ponderosa pine population is still young with point-quarter data estimating approximately 33 trees/acre in 1998 and 32 in 2003. Pinyon pine numbered about 20 trees/acre during both readings. Average basal diameter of ponderosa pine was estimated at 6 inches in 1998 and 8 inches in 2003. Pinyon basal diameter averaged 3.5 inches during both readings. Drought conditions for the past few years caused several young ponderosa trees to display poor vigor in the form of brown needles in 2003.

Herbaceous plants are fairly abundant and diverse. Grasses provided 8% cover in 1994 while forbs produced only 3%. Production doubled in 1998 due to good precipitation. Grass cover nearly doubled to 14%, while

forb cover more than doubled to 8%. Drought conditions caused a 3 fold decrease in herbaceous cover in 2003. The most common species include crested wheatgrass, intermediate wheatgrass, blue grama, and bottlebrush squirreltail. Neither wheatgrass was on the Forest Service seed list which included smooth brome, orchardgrass, timothy, alfalfa, and clover. Crested wheatgrass showed moderate use in 2003. Nearly 30 species of forbs were present on the study site in 1994. Many of the more common species like the buckwheats, penstemon, and Indian paintbrush had shown signs of utilization by deer in 1991. Currently, the most abundant forb species include Carruth sage, redroot eriogonum, sulfur eriogonum, Utah deervetch, and owl clover.

1987 APPARENT TREND ASSESSMENT

Soil conditions appear stable. Protective ground cover is abundant leaving little exposed bare ground. The key browse species, black sagebrush has a high population density with good seedling and young recruitment. Use is light to moderate and vigor good on most plants. Percent decadence is relatively high but young plants are numerous enough to maintain the population. Serviceberry and bitterbrush are the most preferred shrubs on the site. They occur in small numbers and are heavily browsed. The herbaceous understory is abundant and diverse with a good mix of perennial grasses and forbs.

1991 TREND ASSESSMENT

Basic cover for rock, pavement, and bare ground have all slightly increased since 1987, while percent cover for litter and vegetation have both decreased. All principal parameters indicate a slightly downward trend for the soil. The key browse species, black sagebrush, antelope bitterbrush, and serviceberry, have all increased or stayed the same since 1987. The browse trend is up. The herbaceous understory has many species, but the few species that increased since the last inventory are in such low quadrat frequencies they would not effect the overall condition very much. The major decrease was with crested wheatgrass. Except for a small handful of forbs, most declined during the extended drought. Trend for the herbaceous understory would be slightly downward.

TREND ASSESSMENT
soil - slightly downward (2)
browse - up (5)
herbaceous understory - slightly downward (2)

1994 TREND ASSESSMENT

Soil conditions are similar to those of 1991 indicating a fairly stable soil trend. However, percent bare ground is still higher than that of 1987 and litter cover has steadily decreased. Soil trend is considered stable. The browse trend appears stable with healthy populations of black sagebrush and antelope bitterbrush. The 1994 data shows some differences in population estimates for the browse species due to the larger sample taken in 1994. This new sample is a better representation of the actual populations than the samples taken in 1987 and 1991, so changes don't necessarily represent actual changes in population densities. Sum of nested frequencies of herbaceous vegetation have remained stable since 1991, but they are still 21% lower than those of 1987. On the down side, the warm season increaser, blue grama is now the most abundant grass. Crested and intermediate wheatgrass declined slightly. Sum nested frequencies of forbs increased slightly. Trend for herbaceous understory is stable since 1991.

TREND ASSESSMENT
soil - stable (3)
browse - stable (3)
herbaceous understory - stable (3)

1998 TREND ASSESSMENT

Trend for soil is up with a decline in percent bare ground and an increase in litter cover from 35% to 55%. Vegetation cover also increased due to excellent herbaceous production this year. Trend for browse is stable. Black sagebrush appears to be increasing slightly while bitterbrush density has declined. Both species display good vigor and low decadence. Bitterbrush has excellent leader growth this year. Trend for the herbaceous understory is up slightly. Sum of nested frequency of grasses increased slightly with the biggest change being the significant decline of crested wheatgrass, an increase in frequency on intermediate wheatgrass and blue grama, and a significant increase in bottlebrush squirreltail. Sum of nested frequency of forbs also increased.

TREND ASSESSMENT
soil - up (5)
browse - stable (3)
herbaceous understory - up slightly (4)

2003 TREND ASSESSMENT

Trend for soil is stable with similar relative percent cover for vegetation, litter, and bare ground. Protective ground cover is abundant and erosion is not a problem on this site. Trend for browse is mixed. Trend for black sagebrush is up with an increase in density, excellent young recruitment, light use, and good vigor. Bitterbrush has remained stable in density compared to 1994 estimates, but use is extremely heavy and vigor poor on 32% of the population. Use combined with drought conditions have caused an increase in the number of decadent plants, up to 46% of the population. In addition, 58% of the decadent bitterbrush sampled were classified as dying (>50% of stems dead). Young recruitment is poor and the population will probably decline slightly in the future. Low numbers of serviceberry also occur on the site. These preferred shrubs also show heavy use and reduced vigor. Trend for browse is considered down slightly since the most preferred shrubs, bitterbrush and serviceberry, are showing signs of decline. An increase in the already thick population of black sagebrush would be considered detrimental at this site considering the elevation is nearly 8,000 feet. Perennial grasses and forbs along with highly preferred serviceberry and bitterbrush should be the key components of this site. Trend for the herbaceous understory is down. Sum of nested frequency of perennial grasses has declined slightly but sum of nested frequency for perennial forbs has declined by 58%. Eleven of the 19 forbs sampled in 2003 declined significantly in nested frequency. Herbaceous production declined with perennial grass cover dropping by 56% while average forb cover fell 3 fold from 8% to 3%. These trends are caused by drought conditions which have effected the area for the past few years. Especially critical for herbaceous plants is spring precipitation (April to June) which has been below normal for the past 4 years.

TREND ASSESSMENT
soil - stable (3)
browse - down slightly (2)
herbaceous understory - down (1)

HERBACEOUS TRENDS --
Management unit 25C, Study no: 12

Type	Species	Nested Frequency					Average Cover %		
		'87	'91	'94	'98	'03	'94	'98	'03
G	Agropyron cristatum	$_{c}$190	$_{b}$114	$_{b}$110	$_{a}$46	$_{ab}$74	1.55	.98	.86
G	Agropyron intermedium	24	31	18	48	27	.25	1.27	.42
G	Bouteloua gracilis	$_{a}$107	$_{a}$104	$_{ab}$152	$_{b}$183	$_{b}$168	5.54	9.67	4.21
G	Bromus inermis	10	7	4	4	-	.03	.15	-
G	Bromus tectorum (a)	-	-	-	-	1	-	-	.03
G	Carex spp.	-	-	1	6	-	.00	.44	-
G	Oryzopsis hymenoides	-	-	2	-	-	.03	-	-
G	Sitanion hystrix	$_{b}$100	$_{b}$90	$_{a}$15	$_{b}$79	$_{b}$62	.88	1.44	.55
G	Stipa comata	3	4	-	-	3	-	-	.03
Total for Annual Grasses		0	0	0	0	1	0	0	0.03
Total for Perennial Grasses		434	350	302	366	334	8.30	13.95	6.08
Total for Grasses		434	350	302	366	335	8.30	13.95	6.11
F	Agoseris glauca	-	-	-	3	-	-	.00	-
F	Antennaria parvifolia	6	4	-	4	-	-	.15	-
F	Arabis spp.	$_{a}$-	$_{b}$12	$_{a}$-	$_{ab}$5	$_{a}$-	-	.01	-
F	Artemesia carruthii	$_{a}$17	$_{a}$8	$_{ab}$22	$_{b}$36	$_{a}$9	.20	.91	.25
F	Arabis demissa	-	5	-	-	-	-	-	-
F	Astragalus newberryi	6	2	-	6	-	-	.06	-
F	Castilleja chromosa	$_{ab}$7	$_{a}$-	$_{ab}$4	$_{b}$18	$_{a}$1	.01	.37	.00
F	Castilleja linariaefolia	$_{c}$37	$_{ab}$4	$_{ab}$3	$_{b}$14	$_{a}$-	.01	.21	-
F	Calochortus nuttallii	3	1	-	-	3	-	-	.03
F	Comandra pallida	$_{c}$19	$_{a}$5	$_{ab}$8	$_{bc}$21	$_{a}$-	.04	.49	.00
F	Crepis acuminata	9	-	1	3	5	.03	.09	.01
F	Cryptantha spp.	$_{ab}$5	$_{bc}$13	$_{c}$24	$_{ab}$9	$_{a}$-	.09	.09	-
F	Descurainia pinnata (a)	-	-	-	-	6	-	-	.01
F	Draba spp. (a)	-	-	-	-	1	-	-	.00
F	Eriogonum alatum	$_{a}$5	$_{ab}$9	$_{ab}$18	$_{b}$26	$_{a}$5	.15	.35	.06
F	Erigeron divergens	$_{a}$2	$_{a}$5	$_{a}$3	$_{b}$38	$_{a}$-	.01	.35	-
F	Eriogonum racemosum	87	83	83	98	62	.72	.96	.60
F	Eriogonum umbellatum	68	56	55	50	37	.82	.88	.57
F	Gayophytum ramosissimum(a)	-	-	$_{b}$13	$_{a}$-	$_{a}$-	.03	-	-
F	Hymenoxys acaulis	1	-	3	11	-	.03	.09	-
F	Hymenoxys cooperi	3	-	1	2	-	.00	.15	-
F	Hymenopappus filifolius	-	4	-	-	-	-	-	-
F	Lepidium densiflorum (a)	$_{b}$16	$_{a}$-	$_{a}$3	$_{b}$39	$_{a}$3	.00	.10	.03

Type	Species	Nested Frequency					Average Cover %		
		'87	'91	'94	'98	'03	'94	'98	'03
F	Linum lewisii	-	3	5	6	7	.06	.05	.02
F	Lomatium spp.	3	-	-	3	5	-	.00	.01
F	Lotus utahensis	$_{b}$32	$_{b}$24	$_{c}$57	$_{b}$30	$_{a}$-	.43	.75	-
F	Lupinus kingii (a)	$_{b}$7	$_{a}$-	$_{ab}$1	$_{b}$10	$_{a}$-	.00	.31	-
F	Lychnis drummondii	-	-	3	2	-	.00	.00	-
F	Lygodesmia spinosa	$_{a}$-	$_{a}$-	$_{b}$13	$_{ab}$8	$_{a}$2	.20	.04	.03
F	Oenothera pallida	$_{b}$16	$_{ab}$5	$_{b}$15	$_{ab}$6	$_{a}$-	.05	.03	-
F	Orthocarpus purpureo-albus(a)	$_{b}$7	$_{ab}$7	$_{a}$-	$_{c}$46	$_{c}$35	-	1.12	.52
F	Penstemon comarrhenus	$_{b}$73	$_{a}$30	$_{a}$13	$_{a}$40	$_{a}$6	.08	.34	.05
F	Penstemon spp.	$_{a}$4	$_{a}$-	$_{b}$15	$_{a}$-	$_{ab}$6	.06	-	.01
F	Phlox longifolia	$_{ab}$58	$_{b}$61	$_{ab}$49	$_{a}$33	$_{ab}$40	.14	.15	.24
F	Polygonum douglasii (a)	-	-	-	8	-	-	.07	-
F	Sphaeralcea coccinea	$_{b}$10	$_{b}$13	$_{b}$10	$_{a}$-	$_{b}$10	.19	-	.10
F	Taraxacum officinale	-	-	4	-	-	.03	-	-
F	Townsendia incana	-	-	1	3	-	.00	.00	-
F	Tragopogon dubius	1	-	-	-	-	-	-	-
F	Unknown forb-perennial	-	3	-	-	-	-	-	-
Total for Annual Forbs		30	7	17	103	45	0.03	1.60	0.57
Total for Perennial Forbs		472	350	410	475	198	3.39	6.59	2.01
Total for Forbs		502	357	427	578	243	3.43	8.20	2.59

Values with different subscript letters are significantly different at alpha = 0.10

BROWSE TRENDS --
Management unit 25C, Study no: 12

Type	Species	Strip Frequency			Average Cover %		
		'94	'98	'03	'94	'98	'03
B	Amelanchier utahensis	2	5	4	.30	.45	.53
B	Artemisia nova	95	90	97	17.12	17.40	25.88
B	Cercocarpus montanus	1	0	0	-	-	-
B	Chrysothamnus depressus	11	5	4	.06	.48	.09
B	Chrysothamnus viscidiflorus viscidiflorus	13	16	13	.36	1.11	.72
B	Eriogonum microthecum	16	26	22	.13	.80	.25
B	Gutierrezia sarothrae	2	17	8	.06	.42	.21
B	Opuntia spp.	2	0	0	-	-	-
B	Pediocactus simpsonii	0	10	9	-	.03	.03
B	Pinus edulis	0	1	0	-	-	-
B	Pinus ponderosa	0	4	2	.18	.31	.30
B	Purshia tridentata	35	15	34	7.43	5.48	7.10
B	Quercus gambelii	0	17	13	2.47	5.36	3.19
B	Sclerocactus	0	4	0	-	-	-
B	Tetradymia canescens	0	1	2	-	-	-
Total for Browse		177	211	208	28.14	31.87	38.32

CANOPY COVER, LINE INTERCEPT --
Management unit 25C, Study no: 12

Species	Percent Cover '03
Amelanchier utahensis	.18
Artemisia nova	25.63
Chrysothamnus viscidiflorus viscidiflorus	.68
Eriogonum microthecum	.16
Gutierrezia sarothrae	.15
Pediocactus simpsonii	.05
Pinus edulis	.03
Pinus ponderosa	.55
Purshia tridentata	6.06
Quercus gambelii	4.08

KEY BROWSE ANNUAL LEADER GROWTH --
Management unit 25C, Study no: 12

Species	Average leader growth (in) '03
Artemisia nova	1.2
Purshia tridentata	3.5

POINT-QUARTER TREE DATA --
Management unit 25C, Study no: 12

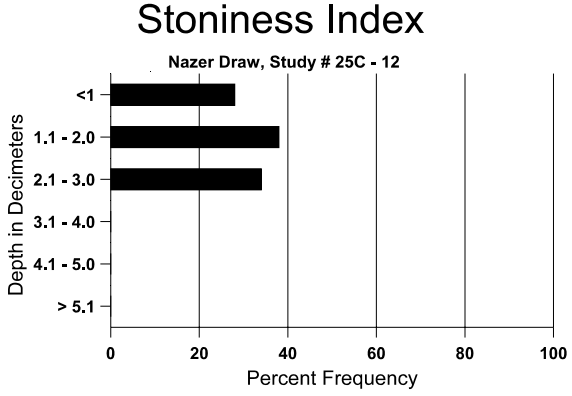
Species	Trees per Acre		Average diameter (in)	
	'98	'03	'98	'03
Pinus edulis	20	20	3.5	3.5
Pinus ponderosa	33	32	6.0	7.9

BASIC COVER --
Management unit 25C, Study no: 12

Cover Type	Average Cover %				
	'87	'91	'94	'98	'03
Vegetation	10.75	7.75	33.47	49.48	42.52
Rock	7.00	8.00	14.85	15.41	14.18
Pavement	10.75	13.00	4.99	12.05	6.04
Litter	62.25	58.50	34.90	54.52	42.09
Cryptogams	0	0	.00	0	.38
Bare Ground	9.25	12.75	12.34	10.12	10.93

SOIL ANALYSIS DATA --
Management unit 25C, Study no: 12, Study Name: Nazer Draw

Effective rooting depth (in)	Temp °F (depth)	pH	%sand	%silt	%clay	%0M	PPM P	PPM K	ds/m
10.4	53.4 (12.1)	5.6	60.0	21.8	18.2	2.4	10.3	112.0	0.4



PELLET GROUP DATA --
Management unit 25C, Study no: 12

Type	Quadrat Frequency		
	'94	'98	'03
Rabbit	23	10	12
Elk	5	12	6
Deer	35	24	38
Cattle	-	2	4

Days use per acre (ha)	
'98	'03
-	-
9 (22)	11 (26)
27 (67)	63 (155)
6 (15)	5 (13)

BROWSE CHARACTERISTICS --
Management unit 25C, Study no: 12

		Age class distribution (plants per acre)					Utilization				
Year	Plants per Acre (excluding seedlings)	Seedling	Young	Mature	Decadent	Dead	% moderate	% heavy	% decadent	% poor vigor	Average Height Crown (in)
Amelanchier utahensis											
87	**133**	-	133	-	-	-	50	50	0	50	-/-
91	**132**	-	66	-	66	-	0	100	50	0	-/-
94	**40**	-	-	40	-	-	0	50	0	0	18/20
98	**100**	-	40	60	-	-	20	0	0	0	22/30
03	**80**	-	20	40	20	-	25	50	25	25	20/19
Artemisia nova											
87	**14599**	466	1133	8466	5000	-	25	4	34	12	8/7
91	**21866**	2400	3600	12666	5600	-	44	12	26	15	12/14
94	**8820**	14640	1640	5200	1980	640	22	0	22	4	13/21
98	**11080**	2000	4640	4440	2000	820	15	.36	18	2	15/26
03	**19540**	180	4400	11720	3420	1140	0	0	18	9	12/18
Cercocarpus montanus											
87	**0**	-	-	-	-	-	0	0	-	0	-/-
91	**0**	-	-	-	-	-	0	0	-	0	-/-
94	**20**	-	-	20	-	-	0	0	-	0	19/16
98	**0**	-	-	-	-	-	0	0	-	0	-/-
03	**0**	-	-	-	-	-	0	0	-	0	20/20
Chrysothamnus depressus											
87	**866**	-	200	666	-	-	23	15	0	0	4/4
91	**1199**	-	133	933	133	-	17	39	11	0	7/11
94	**280**	-	-	260	20	-	14	0	7	0	4/8
98	**180**	-	-	180	-	-	0	0	0	0	3/8
03	**100**	-	-	60	40	-	40	60	40	0	4/8

		Age class distribution (plants per acre)					Utilization				
Year	Plants per Acre (excluding seedlings)	Seedling	Young	Mature	Decadent	Dead	% moderate	% heavy	% decadent	% poor vigor	Average Height Crown (in)
Chrysothamnus viscidiflorus viscidiflorus											
87	**799**	-	266	533	-	-	0	0	0	0	4/8
91	**798**	-	266	466	66	-	42	33	8	0	4/7
94	**360**	-	-	360	-	-	0	0	0	0	7/12
98	**540**	-	180	340	20	-	0	0	4	4	26/34
03	**400**	-	-	340	60	-	5	0	15	10	8/11
Eriogonum microthecum											
87	**2799**	333	533	1800	466	-	24	5	17	7	4/2
91	**3466**	-	1400	2000	66	-	37	8	2	2	5/5
94	**640**	-	120	520	-	-	6	0	0	0	4/5
98	**800**	60	280	520	-	-	3	0	0	0	6/7
03	**840**	-	60	780	-	-	43	7	0	0	6/6
Gutierrezia sarothrae											
87	**866**	-	133	733	-	-	0	0	0	0	8/4
91	**466**	-	66	400	-	-	0	0	0	0	8/6
94	**60**	-	-	40	20	-	0	0	33	0	8/6
98	**660**	100	80	580	-	40	0	0	0	0	9/8
03	**220**	-	-	220	-	-	0	0	0	9	8/7
Opuntia spp.											
87	**0**	-	-	-	-	-	0	0	-	0	-/-
91	**0**	-	-	-	-	-	0	0	-	0	-/-
94	**40**	-	-	40	-	20	0	0	-	0	2/3
98	**0**	-	-	-	-	-	0	0	-	0	-/-
03	**0**	-	-	-	-	-	0	0	-	0	-/-
Pediocactus simpsonii											
87	**0**	-	-	-	-	-	0	0	0	0	-/-
91	**0**	-	-	-	-	-	0	0	0	0	-/-
94	**0**	-	-	-	-	-	0	0	0	0	-/-
98	**200**	-	40	160	-	-	0	0	0	0	3/5
03	**200**	-	40	140	20	-	0	0	10	10	2/3
Pinus edulis											
87	**0**	-	-	-	-	-	0	0	-	0	-/-
91	**0**	-	-	-	-	-	0	0	-	0	-/-
94	**0**	-	-	-	-	-	0	0	-	0	-/-
98	**20**	-	20	-	-	-	0	0	-	0	-/-
03	**0**	-	-	-	-	-	0	0	-	0	-/-

		Age class distribution (plants per acre)					Utilization				
Year	Plants per Acre (excluding seedlings)	Seedling	Young	Mature	Decadent	Dead	% moderate	% heavy	% decadent	% poor vigor	Average Height Crown (in)
Pinus ponderosa											
87	**66**	-	66	-	-	-	0	0	0	0	-/-
91	**66**	-	-	-	66	-	0	0	100	0	-/-
94	**0**	-	-	-	-	-	0	0	0	0	-/-
98	**80**	-	80	-	-	-	0	0	0	0	-/-
03	**40**	-	40	-	-	20	0	0	0	0	-/-
Purshia tridentata											
87	**66**	266	-	66	-	-	0	100	0	0	22/67
91	**798**	600	266	466	66	-	42	42	8	8	7/10
94	**1500**	20	40	1300	160	20	60	16	11	0	12/37
98	**540**	-	120	400	20	-	19	26	4	0	21/52
03	**1440**	-	20	760	660	60	3	97	46	32	16/41
Quercus gambelii											
87	**0**	-	-	-	-	-	0	0	0	0	-/-
91	**0**	-	-	-	-	-	0	0	0	0	-/-
94	**0**	-	-	-	-	-	0	0	0	0	-/-
98	**1680**	520	400	1240	40	180	0	0	2	1	52/47
03	**1500**	-	420	1000	80	140	0	0	5	5	29/17
Sclerocactus											
87	**0**	-	-	-	-	-	0	0	-	0	-/-
91	**0**	-	-	-	-	-	0	0	-	0	-/-
94	**0**	-	-	-	-	-	0	0	-	0	-/-
98	**140**	-	100	40	-	-	0	0	-	0	3/4
03	**0**	-	-	-	-	-	0	0	-	0	-/-
Tetradymia canescens											
87	**66**	-	66	-	-	-	0	0	0	0	-/-
91	**66**	-	66	-	-	-	0	0	0	0	-/-
94	**0**	-	-	-	-	-	0	0	0	0	6/7
98	**20**	-	-	20	-	-	0	0	0	0	6/7
03	**40**	-	20	-	20	-	0	0	50	0	7/6